REMARKS

Re-examination and favorable reconsideration in light of the foregoing amendments and the following comments are respectfully requested.

Claims 37 - 38, 40 - 62, and 64 are pending in the application. Currently, all claims stand rejected.

By the present amendment, claims 37, 38, 42, 44, 47, 48, and 52 have been amended; and claim 43 has been cancelled without prejudice; and new claims 65 - 67 have been added to the application. The amendments to claims 38, 42, and 48 correct minor typographical and/or grammatical errors and are not made for purposes of patentability.

In the office action mailed January 26, 2009, claims 37 - 38, 40, 42, 44, 45 - 46, and 49 - 58 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Abdullah article in view of U.S. Patent No. 6,858,074; claim 41 was rejected under 35 U.S.C. 103(a) as being unpatentable over Abdullah in view of Anderson and further in view of the Schwartz article; claims 47 and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over Abdullah in view of Anderson and further in view of the MSDS for calcium chloride; claims 43 and 59 - 61 were rejected under 35 U.S.C. 1039a) as being unpatentable over Abdullah in view of Anderson and further in view of U.S. Patent No. 6,451,105 to Turpin; claims 62 and 64 were rejected under 35 U.S.C. 103(a) as being unpatentable over Abdullah in view of Anderson and further in view of U.S. Patent Publication No. 2002/0045678 to Lopez.

The foregoing rejections are traversed by the instant response.

At the outset, Applicants would like to thank the Examiner and his SPE for holding a telephone interview with the

undersigned attorney on June 15, 2009. During the interview, it was pointed out to the Examiner that the instant invention differs from the cited and applied prior art in that the solid part set forth in claim 37 is not a Portland cement. Applicants proposed combining the subject matter of then pending claims 37 and 43 and using "consisting of" language to avoid the use of a Portland cement. It was agreed that such an amendment would overcome the rejections of record; however, the Examiner reserved the right to conduct a further search.

Claim 37 has been amended herein to read as follows: a process for producing a material for restoring a mineralized substance in the dental field, said process comprising the steps of: providing an aqueous liquid part; providing a solid part consisting of between 1 and 30% by weight of calcium carbonate and between 70% and 99% by weight of at least one silicate selected from tricalcium silicate and dicalcium silicate, optionally an amount of a radio-opacity increasing agent, and optionally an amount of a colouring agent; providing calcium chloride and a water-reducing agent, both contained in the aqueous liquid part; obtaining a uniform mixture of the solid part and the liquid part; and restoring said mineralized substance by using said uniform mixture as an apical sealing cement, by retrograde surgical route or canal route, or as a dentino-cemental substitute in the case of iatrogenic or pathological canal or pulpal floor perforations, or as a cavity-lining material with or without pulpal exposure, or a jawbone filling material, by placing said uniform mixture on a tooth part to be restored and allowing the mixture placed on the tooth part to set.

Claim 37 does differ from the claim discussed with the Examiners by including the optional amounts of a radio-opacity

increasing agent, and a colouring agent in the composition of the solid part; however the claim captures the spirit of what was discussed via its use of the phrase "consisting of" and the ranges of calcium carbonate and the at least one silicate from claim 43. Claim 37 as presented herein is believed to be allowable over the cited and applied references because it distinguishes the claimed solid part from a Portland cement. Portland cement contains other constituents, such as iron oxide, magnesia, and alumina, which are excluded by the "consisting of" language in claim 37.

With regard to the rejection of claim 37 on obviousness grounds, the Abdullah article concerns the use of accelerated Portland cement as a restorative material. It also concerns the improvement of MTA, a derivative of Portland cement with similar chemical properties for use in the dental field. Calcium chloride is used to accelerate the setting of the cement. It is noted however that Abdullah is silent about any results obtained for the setting time. The Anderson does not concern the dental field, but concerns cements used in the construction field. The disclosed compositions all include a high amount of sand and/or limestone compared with Portland cement (see Table 3). The features obtained with the cement disclosed in this document are very different from those of the present invention. Even though it discloses a "high early-strength", the corresponding strength is significantly lower than that of the invention. So is the setting time. The values of these features are not really adapted to a use of the cement in the dental field. It is submitted that the references, taken alone or in combination with each other, do not render obvious the solid part set forth in claim 37 and thus do not render obvious the claimed method.

Independent claims 44, 47, and 65 - 68 all use the same "consisting of" language and are believed to be allowable because they all exclude the use of a Portland cement.

With regard to the remaining claims, they are all allowable for the same reasons as their parent claims as well as on their own accord. The references to Turpin, Lopez and Schwartz do not overcome the deficiencies of Abdullah and Anderson.

With regard to the Turpin reference, it discloses a cementitious composition comprising Portland cement and a finely divided limestone accelerator. It is recited therein that "the limestone acts as an accelerator, decreasing the initial set time of the resulting composition, and increasing the rate of strength gain" (abstract). It also recites that "the limestone is preferably naturally occurring limestone, commonly about 50% to 95% calcium carbonate by weight." (see col. 3. ll. 31 - 32.) Examples 1 to 7 disclose a composition including a mortar (Portland cement + sand _ water + other) to which is added limestone in an amount from 1.4% to 5.6% weight ratio to resulting mortar weight. The solid part (Portland cement, limestone, fly ash, sand, granulated blast) includes not more than 23% by weight (example 2) of Portland cement which includes dicalcium and/or tricalcium silicate. The disclosed compositions all include a high amount of sand compared with Portland cement or limestone.

The composition of the present invention includes, in its solid part, from 70% to 99% by weight of dicalcium and/or tricalcium silicate and from 1 to 30% by weight of calcium carbonate. The resulting setting times in Turpin are at least 205 minutes (example 1, table 1), whereas in the invention the obtained setting time is less than 30 minutes (see page 3, line 30). The resulting strengths in Turpin are at best 6830 psi

(example 3, table 3) after 7 days (col. 4, ll. 30 - 31), whereas in the invention the obtained resistant to compression within 24 hours is between 100 to 200 MPa (p. 11, l. 20 - 21) that is to say between 14504 and 29009 psi. Thus, the cement of the present invention has significantly improved physical properties as compared to Turpin.

Contrary to the statement of the Examiner relating to the teaching of Turpin, when looking at the obtained setting time and strength in Turpin, the person skilled in the art would not be inclined to use calcite in the amount disclosed in this document. Turpin discloses cement with a little Portland cement and a lot of sand, while the invention discloses cement made principally of dicalcium and/or tricalcium silicate. Thus, there are significant differences between the present invention and the teachings of Turpin. Applicants submit that one of ordinary skill in the art would not be inclined to combine Turpin with Abdullah. Even if one did, they would not arrive at the claimed invention.

The Examiner states that the teachings of Lopez are highly combinable with the art of record since Lopez deals with calcium silicate based dental cements, line Abdullah. Applicants disagree with this assertion as the composition described therein is also very different from that of the present invention. Indeed, while the invention concerns dental cement with the main reactive component being calcium silicate, Lopez discloses a dental composite with the main reactive component being a curable resin (the "curable ethylenically unsaturated component"). The invention propose to resolve the inconvenience of such composite resins (see page 2, l. 4 to p. 3, l. 18).

"To overcome the disadvantages of the presence of mercury and the inaesthetic appearance of silver amalgams, a second type

of restoration material has been developed. It consists of composite resins.

The composite resins are formed by a mixture of organic resin and mineral fillers, which is specifically treated with a product that ensures the binding of the resin to the mineral fillers, without any mercury.

Originally intended for the treatment of anterior teeth, because they satisfy the patients' aesthetic requirements, they are also used for the restoration of posterior teeth.

However, it is noted that the fillings produced with these composite resins have an estimate average lifespan of 7 years, that is half that of the silver amalgam fillings.

This short lifespan of composite resin fillings can be explained by the phenomenon of contraction of the composite resin which occurs during the setting reaction of the composite resins and which no longer provides an adequate marginal seal during the polymerisation reaction, which constitutes a major problem in the use of such resins.

Until now, and in spite of numerous attempts to improve the components of composite resins as well as the associated techniques for use, no composite resin has an adequate marginal seal, in particular in the areas where there is little or no enamel.

In addition, the environmental and aesthetic advantages of composite resins lead to lower spending in terms of public health and savings for the health care budget.

Therefore, there is a real need to have a restoration material for dental reconstitution that offers a compromise between the advantages of silver amalgams, in particular in terms of longevity and mechanical strength, and those of

composite resins, namely the absence of mercury and the aesthetic appearance of the filling.

The objective of this invention is therefore to provide a material used to restore a mineralized substance, in particular for dental restoration, which is capable of resisting pressures of approximately at least 100 MPa, which moreover has dimensional stability during its placement and after it, and finally has good adhesion to the mineral substance that it is intended to restore."

Moreover, Table 3, p. 5 shows flexural strength of no more than 8240 psi, which is equivalent to 56.813 MPa which is very far from the compressive strength values obtained in the present invention (see above).

For the reasons stated herein, Applicants do not believe that the Lopez reference, taken alone or in combination with the other references, teaches, suggests, or renders obvious the claimed invention. Applicant's invention has an unexpected set of physical properties.

The instant application is believed to be in condition for allowance. Such allowance is respectfully solicited.

Should the Examiner believe an additional amendment is needed to place the case in condition for allowance, the Examiner is hereby invited to contact Applicants' attorney at the telephone number listed below.

A request for a three month extension of time is enclosed herewith.

The Director is hereby authorized to charge the extra independent claim fees in the amount of $660.00 and the extension of time fee in the amount of $1,110.00 to Deposit Account No. 02-0184.

If any additional fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 02-0184.

Respectfully submitted,

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